MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2018 / 2019

TCS 2251 – COMPUTER SECURITY

(All sections / Groups)

9 March 2019
2:30 p.m. – 4:30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 4 pages including the cover page.
2. Attempt **ALL** questions. The distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

QUESTION 1

a) Briefly describe **THREE (3)** important goals of computer security.

[3 marks]

b) Provide **TWO (2)** security implications of incomplete mediation problem.

[4 marks]

c) What is Ransomware and it will cause? Give **ONE (1)** notable name of ransomware.

[3 marks]

d) What is cryptographic hash function?

[2 marks]

QUESTION 2

a) Explain how a one-way hash function may be used for message authentication in a symmetric key system.

[4 marks]

b) It is a type of security to protect any data transmitted while using Internet banking, from login credentials to chat conversations.

Briefly explain the encryption method used for the scenario above.

[3 marks]

c) Element integrity refers to the correctness or accuracy of the data in the database. List and explain **THREE (3)** methods of protection to ensure element integrity.

[3 marks]

d) Explain what is Internet Protocol Security (IPsec)? Give **ONE (1)** type of network that uses IPSec.

[2 marks]

Continued.....

QUESTION 3

a) Compare and contrast between Public key cryptography (PKC) and Public key infrastructure (PKI).

[4 marks]

b) Decrypt the following using Monoalphabetic Key cipher where the key is "security".

fsgbmefgh fa gnb mtiq tl fslterigfts abcdefgh

Use the table below to assist in your encryption:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

[2 marks]

c) Why people are often referred to as a risk to the information security of an organization?

[3 marks]

d) What will be the return of security investment if a proposed solution that costs RM 68,000 could mitigate at least 79% of the damages which occur each year, caused by Trojan horse attack? It was reported that the cost of damages per year is RM 120,000.

[3 marks]

QUESTION 4

a) Early password systems provide information that help the attacker to break in more quickly.

Identify the type of password system referred to the above statement with a proper example.

[3 marks]

b) Briefly describe the physical security and premises security?

[4 marks]

c) What is a Patent? Provide **FOUR (4)** advantages of using Patent protection.

[5 marks]

Continued.....

QUESTION 5

a) The purpose of access control is to limit the actions or operations that a legitimate user of a computer system can perform.

Is the statement above correct? Explain your answer.

[4 marks]

b) Why is salted password hashing a better way to store and protect the passwords?

[3 marks]

c) Consider the following program code.

```
txtUserId = getRequestString("UserId");
txtSQL = "SELECT * FROM Users WHERE UserId = " + txtUserId;
```

What is the potential threat for the above program code? Explain how the attacker will exploit this vulnerability.

[3 marks]

d) What is inference? Explain the nature of the inference threat to an RDBMS.

[2 marks]

End of Paper